Describing and Calculating Motion

Objectives:

- Distinguish between distance and displacement.
- Calculate average speed.
- Explain the difference between speed and velocity.
- Interpret motion graphs.

1. Define **Motion:** _____

   _____

2. **Speed** describes _____

3. Speed considers two factors:
   a)
   b)

4. Define **Instantaneous Speed:** _____
   _____
   _____

5. Define **Constant Speed:** _____
   _____
   _____

6. Define **Displacement:** _____
   _____
   _____

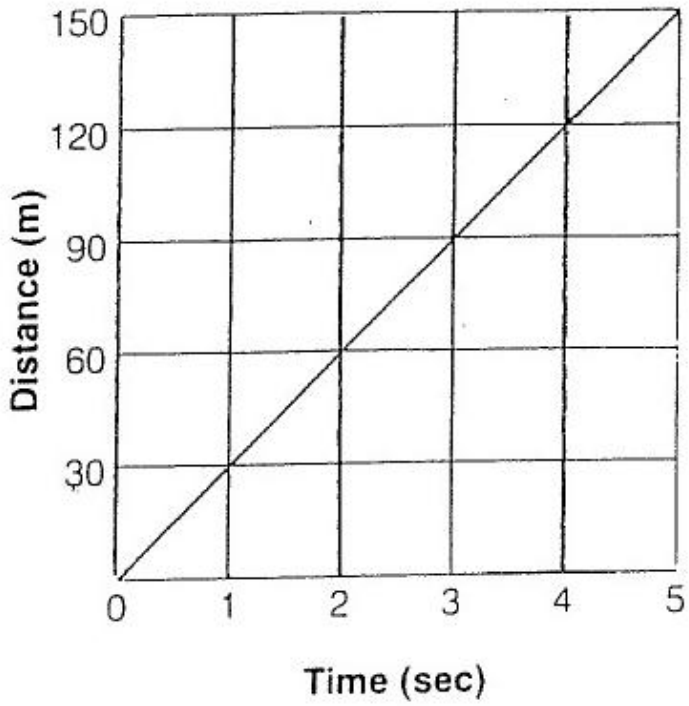
7. Define **Vector:** _____
   _____
   _____

   Remember: Slope of the line is speed.

Speed equation:	speed = $\frac{\text{distance}}{\text{time}}$	v = $\frac{\text{displacement}}{\text{time}}$
SI Unit: meters per second, m/s		

8. The graph below shows the motion of a cheetah over a five second period of time. Use the graph to answer the questions.
   a) How many meters did the cheetah travel after one second?_____

   b) How many meters did the cheetah travel after three seconds?_____



Describe a Distance-Time Graph:

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9. Define **Average Speed:** _____
   _____

10. The graph below shows the motion of a cyclist over a six hour period of time. Use the graph to answer the following questions.
    a) What is the cyclist's speed during the first two hours?

b) What is the cyclist's speed between two and three hours?

c) What is the cyclist's speed between three and four hours?

d) What is the cyclist's speed between four and six hours?

e) Was the cyclist's speed constant over the entire ride?

f) What was the cyclist's average speed over the entire ride?